Los Alamos National Laboratory **Environmental Restoration Program** Standard Operating Procedure	No: LANL-ER-SOP-06.15 Rev: 0

Coliwasa Sampler for Liquids and Slurries

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COLIWASA SAMPLER FOR LIQUIDS AND SLURRIES

1.0 PURPOSE

This procedure describes the use of the Coliwasa sampler for obtaining samples of free-flowing liquids and slurries in tanks, drums, pits, and similar containers.

2.0 SCOPE

2.1 Applicability

This procedure is applicable to all field team members using the Composite Liquid Waste Sampler (Coliwasa) of free flowing liquid and slurries in tanks, drums, pits, and similar containers for the Environmental Restoration program.

2.2 Training

The field team members should be familiar with the waste sampling objectives and must document that they have read and understand this procedure as well as the procedures in Section 1.0, General Instructions.

3.0 DEFINITIONS

N/A

4.0 BACKGROUND AND/OR CAUTIONS

The Coliwasa is designed to collect liquid hazardous waste. It permits the representative sampling of multiphase wastes of a wide range of viscosity, corrosivity, volatility, and solids content. Its simple design makes it easy to use and allows the rapid collection of samples, thus minimizing the exposure of the sample collector to potential hazards from the waste. The sampler is commercially available, as either a reuseable or disposable unit, but is relatively easy and inexpensive to fabricate. The cost of fabrication is low enough that the contaminated parts may be discarded after a single use when they cannot be easily cleaned. The use of disposable units decreases the likelihood of cross-contamination.

The main parts of the Coliwasa consist of the sampling tube, the stop-cock, and the closure system. (See Attachment A for example.) The sampling tube consists of a 5-foot (1.52-m) by 1 5/8-inch (4.13-cm) I.D. translucent plastic pipe; usually polyvinyl chloride (PVC), PTFE or borosilicate glass plumbing tube.

Coliwasas are constructed of either plastic or glass. The plastic type consists of a translucent plastic sampling tube. The glass Coliwasa uses borosilicate glass plumbing pipe as the sampling tube.

The plastic Coliwasa is used to sample most containerized liquid wastes except wastes that contain ketones, nitrobenzene, dimethylforamide, mesityl oxide, and tetrahydrofuran.

The glass Coliwasa is used to sample all other containerized liquid wastes that cannot be sampled with the plastic Coliwasa except strong alkali and hydrofluoric acid solutions.

The Coliwasa sampler has the following limitations:

- Not suitable for sampling in containers over 5 feet (1.5-m) deep
- Cannot be used for sampling hydrofluoric acid and concentrated alkali solutions.

Site workers preparing for field operations should read and understand the procedures outlined in LANL-ER-SOPs, Section 2.0, Health and Safety in the Field. In addition, site workers should refer to site-specific Operable Unit Health and Safety plans for the particular health and safety equipment to be used.

5.0 EQUIPMENT

See Attachment B, Equipment and Supplies Checklist, for a list of equipment required to implement this procedure.

6.0 PROCEDURE

A. Assemble the necessary equipment and appropriate protective clothing.

B. Pack and transport the equipment to the site.

C. Decontaminate all equipment per the instructions in SOP-02.07, General Equipment Decontamination.

D. For drum and containerized liquid sampling perform the following procedure.

   1. Open unknown drums using a remote drum opening device when possible.

      Note: A bulging container indicates pressure and should receive special handling.

   2. Draw the sample from the bung openings whenever possible.

E. Insert the Coliwasa into the desired liquid phase to be sampled and obtain the sample.

F. Transfer the sample from the Coliwasa to the sample container.

G. Decontaminate reusable samplers before reuse, or use a new sampler to ensure no contamination or cross-contamination.

H. Repeat steps D through G until all samples have been collected.

I. For drum and containerized materials, reclose the container.

6.1 Documentation

A. Complete Containerized Waste Sampling Forms (Attachment C). Use the Daily Activity Log from SOP-01.04, for additional comments if necessary.

B. Complete other applicable sample forms and labels.

6.2 Post Sampling Activities

A. Ensure all equipment is accounted for, decontaminated per SOP-02.07 or disposed of properly, and ready for transport.

B. Make sure all sampling locations are properly documented.

C. Package all samples for transport to the Sample Coordination Facility (SCF) per SOP-01.03, Handling, Packaging, and Shipping of Samples. All sampling efforts must be coordinated with the SCF.

D. Return the equipment to the equipment manager. Report any malfunction or damage.

E. Deliver all forms to the field team leader.

7.0 REFERENCES

The following procedures are directly associated with this procedure and should be reviewed before field operations:

LANL-ER-SOPs in Section 1.0, General Instructions.
LANL-ER-SOPs in Section 2.0, Health and Safety in the Field.

EPA. November 1986, "Test Methods for Evaluating Solid Waste," Vol. II: Field Manual Physical/Chemical Methods, Officer of Solid Waste and Emergency Response, Washington D.C.

8.0 RECORDS

A. Completed Containerized Waste Sampling Form

B. Completed Chain-of-Custody/Request for Analysis Form

C. Daily Activity Log containing deviations along with any other pertinent information

9.0 ATTACHMENTS

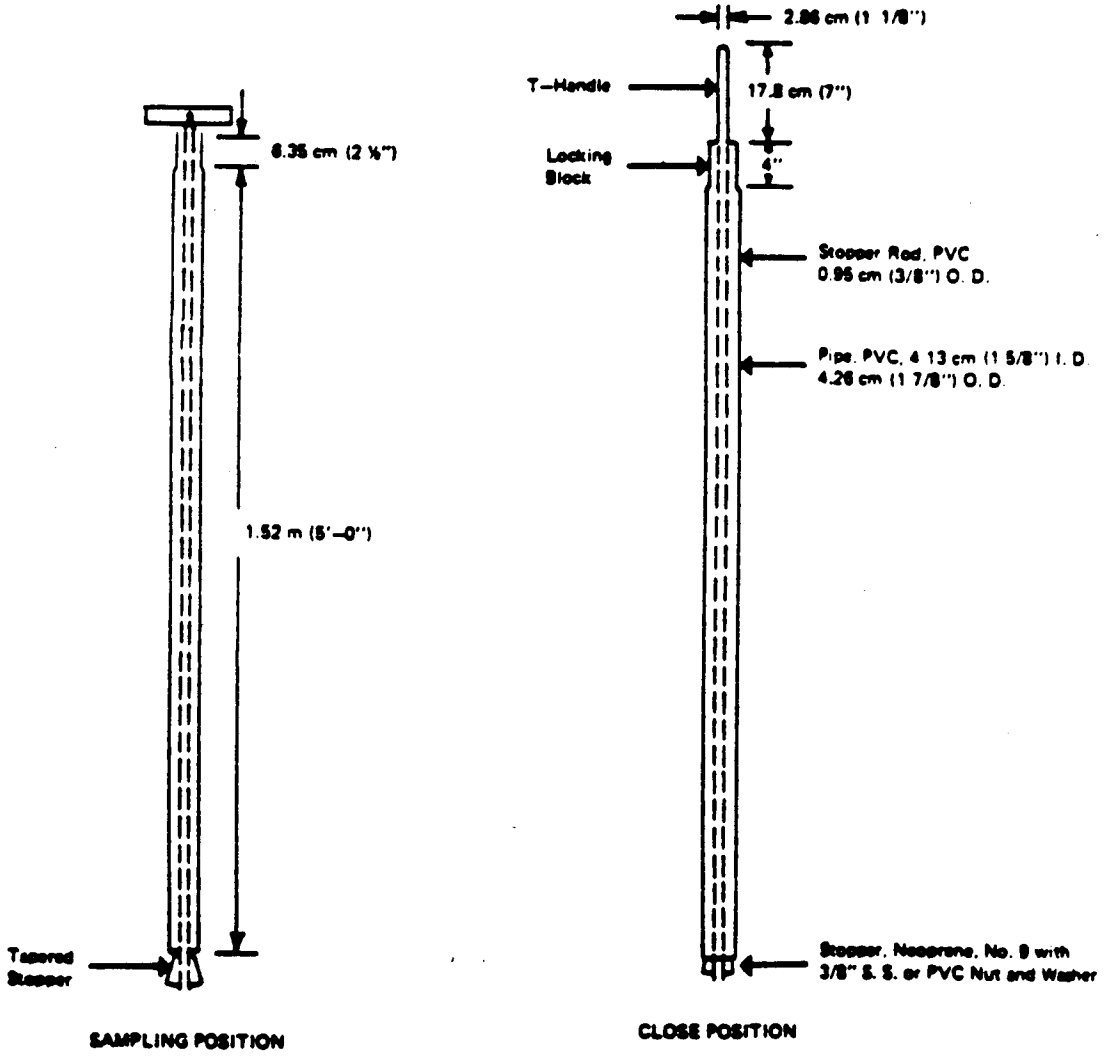
A. Example of one type of Coliwasa

B. Equipment and Supplies Checklist

C. Containerized Waste Sampling Form

D. Data Form Completion

EXAMPLE OF ONE TYPE OF COMPOSITE LIQUID WASTE SAMPLER (Coliwasa)



EQUIPMENT AND SUPPLIES CHECKLIST FOR USING A COLIWASA SAMPLER FOR LIQUIDS AND SLURRIES

_____ Coliwasa

_____ Protective clothing

_____ Remote drum opening device

_____ Sample containers

_____ Daily Activities Logs

_____ Containerized Waste Sampling forms

_____ Chain-of-Custody/Request-for-Analysis forms

_____ Sample collection logs

_____ Variance logs

_____ Custody seals

_____ Unique Sample Stickers

_____ Sample Labels

CONTAINERIZED WASTE SAMPLING RECORD

LOS ALAMOS NATIONAL LABORATORY
ENVIRONMENTAL RESTORATION
CONTAINERIZED WASTE SAMPLING RECORD

Date: _____ Sheet _____ of _____

Technical Area _____ Operable Unit _____

Site Work Plan: _____

Signature: _____

AFFIX FIRST SAMPLE STICKER HERE

AFFIX LAST SAMPLE STICKER HERE

Sampling Period: Start _____ End _____

Sampling Method: ___ Coliwasa ___ Weighted Bottle ___ Trier
___ Thief ___ Hand Auger

Waste Container Information:

Total Number of Containers _____

Type _____

Volume _____

Origin _____

Markings _____

Labels _____

Other Identification _____

Color _____

Condition _____

Sample Matrix:

___ Liquid/Slurry
___ Sludge
___ Oil
___ Other (Describe)
_____
_____

___ Sand
___ Packed Powder/Granules
___ Dry Powder/Granules
___ Moist Powder/Granules

COMMENTS: _____

_____

_____

_____

☐ CHECK HERE IF CONTINUED ON BACK OF THIS SHEET

DATA FORM COMPLETION

Use an indelible dark ink pen. Make an entry in each blank. For entry blanks for which no data are obtained, enter UNK for Unknown, NA for Not Applicable, or ND for Not Done. To change an entry, draw a single line through it, add the correct information above it, and date and initial the change. For all forms, complete the following information:

CONTAINERIZED WASTE SAMPLING RECORD (ATTACHMENT B)

1. Technical Area (TA). Two-digit number indicating the TA in which the sampling is being done or sample is being studied.

2. Operable Unit. Four-digit number indicating the operable unit in which the sampling is being done or sample is being studied.

3. Sample Identification:

   - If the Daily Activity Log addresses only one sample, attach a sticker from the batch of stickers that match the sticker number on the sample, and line through the box labeled "Attach Last Sample Number Here."

   - If the Daily Activity Log addresses a sequential number of samples, put the first matching sample sticker in the box marked "First" and put the last matching sample sticker in the box marked "Last."

   - If sample identifiers used are not sequential, affix the lowest sample sticker number in the left box, record the remaining sample identifiers on the form and Daily Activity Log, and line through the "Last" box.

4. Log Date and Time. The date and time when the measurement was made, in the following formats: DD-MMM-YY (e.g., 01-JAN-88), and the 24-hour clock time (e.g., 0837 for 8:37 a.m. and 1912 for 7:12 p.m.).

5. Sheet Number. Number all the sheets that are used for this activity, by day or by some practical unit.

6. Weather and other comments. Record all other conditions pertinent to the sample collection in this section on the Daily Activity Log in SOP-01.04.